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THE ISSUER AND INVESTOR CREDIT RATINGS – THE IMPACT ON THE STOCK PRICES

CREDIT RATING OPŁACANY PRZEZ EMITENTA I INWESTORA – WPŁYW NA KURSY AKCJI

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Abstract: The basic goal of the article is to analyse the impact of credit rating changes on the rates of return on banks' shares, considering the entity that asked for assigning a credit rating. The following hypotheses are proposed: banks' share prices react stronger to the investor-paid credit rating changes. the strongest impact of the banks' credit rating changes is observed for a downgrade, for both the issuer and the investor credit ratings, while a stronger significant reaction is observed after the moment of publication. The analysis was prepared on the Thomson Reuters Database. The analysis was carried out on data from the years 1980 to 2015, for banks from the European countries, by using event study methods.

Keywords: credit rating, issuer, investor, stock prices, event study.

Streszczenie: Podstawowym celem artykułu jest analiza wpływu zmian credit ratingu na stopy zwrotu z akcji banków, z uwzględnieniem podmiotu, który zwraca się o przyznanie ratingu. Postawiono następujące hipotezy badawcze: ceny akcji banków silniej reagują na zmiany credit ratingu opłacanego przez inwestora. Najsilniejszy wpływ na zmiany credit ratingów banków ma obniżenie ratingów zarówno emitenta, jak i inwestora. Silniejsza znacząca reakcja następuje po momencie publikacji. Analiza została przygotowana na bazie danych Thomson Reuters. Analizę przeprowadzono na danych z lat 1980-2015 dla banków z krajów europejskich, stosując metody event study.

Słowa kluczowe: credit rating, emitent, inwestor, kursy akcji, event study.

1. Introduction

During the last financial crisis, a lot of attention has been drawn to credit rating agencies (CRAs). These institutions have been accused of responding too late to the changes of the financial situation of rated companies. As a result, the European Commission proposed some ideas connected with CRAs. One of them is to analyse

the alternatives associated with the credit ratings' source of funding. Three methods of paying for notes have been proposed: issuer, investor and government CRAs. The most popular method is the one involving the issuer. This situation is connected with the fees for credit ratings. Fulghieri and Strobl [2014] found that CRAs charge higher fees if they previously gave unfavourable unsolicited credit ratings. The issuing of unfavourable unsolicited ratings increases their reputation. They suggest to investors that they resist the temptation to issue inflated ratings. As a result, the unsolicited credit ratings are lower than the solicited notes. They show that, under certain conditions, a credit rating system that incorporates unsolicited ratings leads to more stringent rating standards.

Consequently, an interesting result can be obtained when a comparison is made between the impact of the investor and issuer credit rating on the financial market. The basic research question is: are there any differences between the strength of impact of the issuer and the investor on the financial market? Therefore, the aim of this paper is to analyse the impact of the credit rating changes on the rates of return on banks' shares, considering the entity that asked for assigning the credit rating. Considered notes are connected with the specific conditions of the banking sector.

In the paper, the following hypotheses are proposed: banks' share prices have a stronger reaction to the investor-paid credit rating changes; the strongest impact of the banks' credit rating changes is observed for a downgrade, for both the issuer and the investor credit ratings; a stronger significant reaction is observed after the moment of publication.

The verification of the impact of credit rating changes on the stock prices is associated with higher volatility of the mentioned securities. The analysis was carried out on 8356 banks' credit rating changes from European countries, by using event study methodology. To the best of the author's knowledge, research on the impact of changes in credit ratings offered by small agencies has not been presented before.

The remainder of the paper is organized as follows: section 2 presents the literature review of the differences between the issuer and the investor-paid credit ratings, their impact on the financial system and influence of credit rating changes on abnormal rates of return. Section 3 is the description of data and used methodology. Section 4 describes the results of exploring the relation between the rating changes and the changes in share prices in two subsamples, according to the source of funding and the direction of credit rating changes. The last part contains conclusions.

2. Literature review

Credit rating agencies publish notes at the request of the investor, issuer or on their own. As a result, differences in estimation results can occur. Bongaerts [2014] prepared the model of the issuer and investor-paid credit rating agencies effectiveness. He suggests that the issuer-paid CARs create rating inflation. On the

other hand, the investor-paid CRAs suffer from three sources of free-riding and are generally not economically viable when competing with issuer-paid CRAs.

There are only a few parameters that can help to develop investor-paid CRAs. Results obtained by Bongaerts [2014] suggest also that other alternative methods, like investor-produced ratings or co-investments, produce the skin-in-the-game effect. However, the issuer-paid models are taken into consideration by investors more often than the other ones. Investor-paid CRAs are less popular, and generate lower demand.

The competition between credit rating agencies creates rating inflation. If issuers pay for notes, CRAs give better notes in order to attract customers [Griffin et al. 2013]. The use of private benefits allows to obtain undesirable opportunistic behaviour in a fully rational model, as also in [Opp, Opp, Harris 2013; Winton, Yerramilli 2011]. The rating inflation effect is not a result of naive investors [Bolton et al. 2012] or unethical CRAs [Mathis et al. 2009]. Private benefits for investors have similar effects [Bongaerts 2012]. On the other hand, Deb and Murphy [2009] propose using investor-paid ratings co-financed by the government.

Bhattacharya, Wei, and Xia [2014] took into consideration institutional equity trading data and identified institutional investors that were using Egan Jones ratings (investor-paid rating agency) for making decisions. They found that these entities respond more strongly to EJR ratings than to issuer notes. They receive higher profits. Strobl and Xia [2012] compared the S&P and EJR notes and their impact on the bond market. They suggested that the notes given by S&P are more inflated. On the other hand, they could not find the evidence that the inflated ratings influence significantly the corporate bond yield spreads. This can suggest that investors may be unaware of the S&P's incentive to issue inflated notes. Jiang, Stanford and Xie [2012] compared S&P charges for investors and Moody's charges for issuers, and found that S&P's ratings are lower than Moody's. If S&P adopts the issuer-paid ratings, they are not different from Moody's. More importantly, S&P proposed higher ratings for bonds with higher risk, measured by higher expected rating fees or lower credit quality. The investor-paid credit rating agencies improve the ratings quality because EJR's coverage elevated its reputational concerns [Xia 2014].

Kashyap and Kovrijnykh [2013] propose a model according to which the investors use credit ratings to decide if they should invest in a particular company. The rating quality depends on an unobservable effort of the credit rating agency. In the model, they decided to analyse the optimal compensation, depending on the source of financing for the rating. They also confirm rating inflation if notes are ordered by the issuer, but according to their opinion, investors ask for ratings insufficiently often.

Johnson [2003] analysed notes proposed by S&P and EJR. The obtained results suggest that S&P's new grade was correlated with the EJR notes that had been given at least ten weeks earlier. This suggests that S&P's downgrades do not occur immediately after the negative surprises for firms, but rather after an accumulation of

bad news. S&P ratings converge toward Egan-Jones Ratings. Beaver, Shakespeare and Soliman [2006] suggest that the EJR notes reflect information on the marketplace more accurately. They correct the notes up to 237 days earlier than Moody's and S&P. EJR publishes timelier and more accurate ratings with a predictive value.

In the literature review, there is some research on the impact of credit rating changes on stock prices. The prepared analysis verifies the impact of the aforementioned factors on notes proposed by the three biggest CRAs. The analysis takes into consideration the productive entities samples. Only a few published papers prepare an estimation on banks' notes [Schweitzer et al. 1992; Gropp, Richards 2001; Bremer, Pettway 2002]. The differences between the strength of the impact of banks' and productive entities credit rating changes on the stock prices were emphasized. It can be the result of the level of supervision. A higher level of regulation can increase the public information about the financial market [Schweitzer et al. 1992].

The results obtained by researchers are also varied. Some of them suggest that both downgrades and upgrades are significant for stock prices [Schweitzer et al. 1992; Gropp, Richards 2001]. Bremer and Pettway [2002] did not find a significant relationship between the mentioned variables. On the other hand, Calderoni and others [2009] found significant cumulative abnormal returns for downgrades in a two-day window and during the event window and they did not observe the abnormal rates of return after upgrades. The same results were obtained by Paterson and Gauthier [2013]. Kräussl [2003], for example, found a stronger impact of the downgrade of credit ratings, credit watches and rating outlooks than that of the positive adjustments.

The literature research allows for grouping into different subsamples. For example, the impact of the size of the evaluated company was verified. The abnormal returns are obtained by smaller companies [e.g. Bernard 1990; Fama 1998]. Han, Shin, Reinhart and Moore [2009] conducted a multivariate regression and found no significant results for the company size effect. The period of credit ratings was analysed as well. Hiu, Nuttawat and Puspakaran [2004] found that the stock market reacts significantly to the long-term issuer credit ratings and insignificantly to the short-term ones. Another classification was prepared by Vassalou and Xing [2003], which included also the size of the capital market, the level of development of the economy and the probability of default. Jones and Mulet-Marquis [2014] prepared an analysis for domestic US and foreign banks. They found significantly larger negative abnormal returns due to downgrades for domestic banks than for the international banks listed in the US.

There is no research analysing the impact of the credit rating changes proposed by the issuer and investor-paid CRAs. Berwart, Guidolin and Milidonis [2014] found that during the last years, the relationship between the investor and issuer CRAs is weakened. Furthermore, a less conservative policy was adopted by issuer-paid CRAs

during the estimation of the outlooks in comparison with the rating methodology. They observed statistically significant abnormal reactions to the downgrades of both issuer and investor-paid CRAs, which, however, are higher for investor-paid notes. The analysis was carried out for all the noted companies.

The current propositions published by the regulators suggest that the investor-paid notes yield better results. Consequently, the basic goal of this article is to analyse the impact of the credit rating changes on the rates of return on banks' shares, considering the entity that asked for assigning a credit rating.

As it has been already mentioned, there is no research taking into consideration this problem. The comparison of investor and issuer banks' credit ratings' impact on the stock prices had not been verified before.

The next section presents the methodology and data description that are taken into consideration during the verification of the proposed hypotheses.

3. Methodology

The basic goal of the article is to analyse the impact of credit rating changes on the rates of return on banks' shares, considering the entity that asked for assigning a credit rating. Thomson Reuters Database was used to verify the proposed hypotheses, while the analysis was carried out on daily data for years 1980 to 2015. Differences between the logarithmic rates of return of European banks' share prices and the logarithmic rates of return of European banks' share prices were used as the observed variables. Collected long term issuer credit ratings paid by issuers and investors are used as independent variables.

The analysis was carried out on notes published by both bigger and smaller CRAs. Big credit rating agencies include: Moody, S&P and Fitch. The sample of smaller CRAs includes the rest of credit rating agencies. In the table below the analysed credit rating agencies with their market share are presented. The mentioned institutions are certified by ESMA. The analysis covers also two agencies which are not certified in Europe. These include: R&I Credit Rating Agency and Japan Credit Rating Agency. The mentioned institutions produced notes for banks, because banks issued bonds in other countries, and they needed ratings recognized by the local agencies.

The verification of the hypothesis was carried out by using event study methods. Their goal is to verify the response of the rates of return on banks' shares on the credit rating changes in the short term. The research was carried out by using the cumulative rates of returns for the three periods of time. The first one relies on the verification of the abnormal rates during the pre-event window. This window consists of the abnormal rates of return changes from 11 to 2 days before the event. The event period covers four days starting one day before the event date and ending two days after the event. The post-event window represents ten days after the event.

Table 1. List of credit rating agencies with the market share in Europe

Credit rating agencies	Credit rating and additional activity				Credit rating activity		
	2012	2013	2014	2015	2012	2013	2014
Moody	36.69%	36.38%	36.99%	31.29%	39.18%	37.51%	36.50%
Fitch	17.67%	16.47%	18.40%	16.56%	20.37%	18.44%	19.47%
S&P	32.88%	36.00%	38.43%	45.00%	36.80%	39.58%	40.17%
Euler Hermes Rating GmbH	0.24%	0.26%	0.25%	0.21%	0.26%	0.28%	0.25%
Feri EuroRating Services AG	0.84%	0.78%	0.76%	0.40%	0.02%	0.04%	0.05%
BCRA-Credit Rating Agency AD	0.02%	0.03%	0.00%	0.02%	0.02%	0.04%	0.00%
Scope Ratings AG (PSR Rating GmbH)	0.10%	0.20%	0.17%	0.39%	0.11%	0.21%	0.16%
GBB-Rating Gesellschaft für Bonitätsbeurteilung GmbH	0.34%	0.34%	0.33%	0.34%	0.34%	0.34%	0.31%
DBRS Ratings Limited	0.82%	1.23%	1.39%	1.89%	0.95%	1.38%	1.48%
Capital Intelligence (Cyprus) Ltd	0.00%	0.00%	0.03%	0.14%	0.00%	0.00%	0.03%
Dagong Europe Credit Rating Srl (Dagong Europe)	0.01%	0.01%	0.01%	0.04%	0.01%	0.01%	0.01%
EuroRating Sp. z o.o.	0.01%	0.01%	0.00%	0.01%	0.05%	0.05%	0.02%
Rating-Agentur Expert RA S.A.				0.00%			

Source: own study.

The methodology of the event study requires the aggregation of the abnormal differences in variables within each event window to construct cumulative abnormal differences (CAD), assuming that no other factors occurred in that period. The significance of the impact of the mentioned credit rating changes is verified by using the t-Student test. The small number of observations may weaken the power of statistical tests, suggesting the need to consider both the economic and statistical significance of the results.

4. Findings

The verification of the hypothesis was made by using event study methods. Firstly, the impact of banks' credit rating changes on their stock prices in two samples was analysed, according to the source of financing. The result of the estimation for this relationship is presented in the table below. The investor-paid credit rating changes have a statistically significant influence on the logarithmic rates of return, both in the case of upgrades and downgrades of notes. Before the moment of the publication of the information about credit ratings upgrades, the rates of return rise by nearly 3% within 10 days. During the event window, the rates of return of shares are higher also by 3%, which means a 1% daily increase. The same relationship was observed for the differences between the rates of return. A different situation was noticed in the case of downgrades. The stock market reacts to the credit ratings announcement before the moment of publication of the information.

Next, the impact of the issuer-paid credit rating changes on the rates of return and differences between them was analysed. The presented results suggest that the financial market reacts both to the upgrades and downgrades of notes. If CRAs publish information about the upgrades, rates of return are statistically significantly higher by 0.5% before and by 0.8% at the moment of publication. On the other hand, if the information about the downgrades was presented to the public, stock prices are lower by 0.5% during the event window, and by 1.2% after the publication.

Table 2. The estimation of the impact of credit rating changes on the logarithmic rates of return on banks' shares according to the investor and issuer credit ratings

CR type	Logarithmic rates of return				Differences between rates of return			
	investor credit rating		issuer credit rating		investor credit rating		issuer credit rating	
change	U	D	U	D	U	D	U	D
<i>Pre-event window</i>								
_cons	0.0298*	-0.0358*	0.00542*	0.000489	0.0233*	-0.00026	-0.00219	-0.000933
	(-1.73)	(-2.64)	(-2.26)	-0.14	(-2.43)	(-0.07)	(-1.59)	(-0.59)
N	7	15	854	1372	7	15	854	1372
<i>Event window</i>								
_cons	0.0297**	0.0106	0.00846***	-0.0051*	0.0204***	0.000745	0.00392***	0.00171
	-2.7	-1.29	-3.65	(-2.02)	-3.26	-0.09	-3.59	-0.92
N	7	15	854	1372	7	15	854	1372
<i>Post-event window</i>								
_cons	0.0112	-0.0132	-0.00356	-0.012***	-2.88E-05	0.000396	-0.00354*	-4.59E-05
	-0.69	(-0.84)	(-1.49)	-3.85	(-0.00)	-0.06	(-2.28)	(-0.03)
N	7	15	854	1372	7	15	854	1372

Note: U – upgrade; D – downgrade; CRA – credit rating agency; CR – credit rating.

Source: own study.

The presented results suggest that investors are more sensitive to the investor-paid credit rating changes than to those financed by the issuers. This can be the result of the lower confidence in notes given at the request of the issuer. On the other hand, investors can be aware of ratings inflation. A stronger relationship was observed both in the case of upgrades and downgrades. The obtained results confirm the previous findings that the increase of credit ratings has a weaker influence on the stock prices. According to the efficient market hypothesis, the financial market reacts earlier to the information about the credit rating changes. On the other hand, the impact of the publication of the information about the mentioned changes is weaker than in the case of those described by the previous research in the literature. This can be the result of the regulations and supervision of the banking sector.

The described situation can be connected with the issuer's preference of high over accurate ratings, especially private benefits for the issuer from the operating

firm. Such private benefits would be expected from rating inflation. The reaction of the investors to the credit ratings changes confirm the opinion that ratings inflation does not result from naive investors or unethical CRAs. Investors try to analyse the risk themselves, and take into consideration the laxity of banking law or issuers behaviour.

Next the impact of credit rating changes was analysed by taking into consideration the size of the credit rating agencies. The result of the estimation for this relationship is presented in Table 3. The credit rating changes published by bigger credit rating agencies have a statistically significant influence on the logarithmic rates of return, both in the case of upgrades and downgrades of notes. The stronger reaction has been observed for downgrades, as in the previous case. A higher reaction was noticed after the publication of the information about the credit ratings changes in the case of upgrades; and a similar effect in the case of downgrades. The banks' stock prices react statistically significantly to credit rating changes presented by smaller agencies, only in the case of downgrades. This can be the effect of recognizability of credit rating agencies and the limited investors' confidence to notes published by the mentioned agencies.

Table 3. The estimation of the impact of credit rating changes on the logarithmic rates of return on banks' shares according to the investor and issuer credit ratings

Differences between rates of return					Logarithmic rates of return			
credit rating	big	small	big	small	big	small	big	small
	upgrade		downgrade		upgrade		downgrade	
Obs	182	11	362	17	182	11	362	17
<i>Event window</i>								
<i>_cons</i>	0.00172	0.011	-0.008	0.00136	0.117**	-0.0721	-0.227***	0.0056
<i>t</i>	-0.47	-0.57	(-1.21)	-0.13	-3.29	(-0.30)	(-4.36)	-0.03
<i>Pre-event window</i>								
<i>_cons</i>	0.00728	0.271	0.00563	0.21	0.496**	-4.609	-1.311***	-3.429*
<i>t</i>	-1	-1.55	-0.56	-2.12	-2.71	(-1.18)	(-4.82)	(-2.10)
<i>Post-event window</i>								
<i>_cons</i>	-0.0031	-0.456	0.0246	-0.162*	0.540**	-4.623	-1.355***	-2.221*
<i>t</i>	(-0.40)	(-1.42)	-1.78	(-2.40)	-3.06	(-1.16)	(-4.02)	(-2.48)

Source: own study.

Next, the impact of credit ratings changes was analysed, according to the type of the credit rating agency. The investor-paid credit ratings were published only by S&P. The rest of the presented findings are connected with the impact of the issuer notes. As it was mentioned before, the rates of return on stock prices react stronger to the investor paid credit ratings. A weaker reaction was observed for the

Table 4. The estimation of the impact of credit rating changes on the logarithmic rates of return on banks' shares according to the type of credit rating agency

CRA	Dominion		Fitch		JCR		Moody		R&I		S&P			
	U	D	U	D	U	D	U	D	U	D	U	D		
type of CR	issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings			
<i>Pre-event window</i>														
_cons	0.221	-0.02	0.0104	-0.00517	-0.0005	-0.0224	-0.0013	0.0163	0.00107	0.000282	-0.0298	-0.0358*	-0.0063	-0.00214
	(-1.23)	(-0.90)	(-1.81)	(-1.67)	(-0.05)	(-1.91)	(-0.33)	-1.54	-0.08	-0.02	(-1.13)	(-2.64)	(-1.82)	(-0.39)
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689
<i>Event window</i>														
_cons	-0.01	0.0126	0.0133	-0.00526*	-0.005	-0.0161	0.00319	-0.016*	-0.0019	0.00579	0.0297*	0.0106	0.0103***	-0.00251
	(-0.90)	-0.57	-1.75	(-2.03)	(-0.92)	(-1.56)	-1.11	(-2.03)	(-0.23)	-0.56	-2.7	-1.29	-3.36	(-0.65)
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689
<i>Post-event window</i>														
_cons	-0.0051	-0.0053	-0.0036	0.00432	-0.0052	-0.02	-0.0033	0.00748	0.0217	-0.0106	0.0112	-0.0132	-0.005	0.0194***
	(-0.31)	(-0.27)	(-0.57)	-1.32	(-0.65)	-1.77	(-0.85)	-0.82	-1.69	(-0.89)	-0.69	(-0.84)	(-1.47)	-3.87
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689

Note: U – upgrade; D – downgrade; CRA – credit rating agency; CR – credit rating.

Source: own study.

Table 5. The estimation of the impact of credit rating changes on the differences between the logarithmic rates of return on banks' shares according to the type of credit rating agency

CRA	Dominion		Fitch		JCR		Moody		R&I		S&P			
	U	D	U	D	U	D	U	D	U	D	U	D		
change type of CR	issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings		issuer credit ratings			
<i>Pre-event window</i>														
_cons	-0.011	-0.0094	-0.0033	-0.0048**	-0.008	-0.011	0.0019	0.00452	-0.004	0.00402	-0.0233	-0.00026	-0.00219	-0.0002
	(-2.00)	(-0.58)	(-1.39)	(-2.80)	(-1.82)	(-1.70)	-1.05	-1.01	(-0.99)	-0.73	(-2.43)	(-0.07)	(-1.00)	(-0.09)
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689
<i>Event window</i>														
_cons	-0.001	0.00918	0.0101**	-0.0008	0.0064	-0.0039	-0.002	-0.006	-0.003	0.00421	0.0204*	0.000745	0.00387**	0.00521
	(-0.30)	-0.51	-3.29	(-0.54)	-1.74	(-0.51)	(-0.95)	(-1.17)	(-0.58)	-0.64	-3.26	-0.09	-2.63	-1.71
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689
<i>Post-event window</i>														
_cons	0.0124	-0.0089	-0.0015	0.00401*	0.0032	0.00874	-0.002	0.00246	0.0048	-0.0004	-0.0000	0.000396	-0.0059**	-0.0029
	-2	(-0.64)	(-0.32)	-2.28	-0.57	-1.21	(-1.32)	-0.65	-1.01	(-0.08)	(-0.00)	-0.06	(-2.69)	(-1.06)
N	10	34	155	335	39	38	131	226	30	50	7	15	488	689

Note: U – upgrade; D – downgrade; CRA – credit rating agency; CR – credit rating.

Source: own study.

downgrades than the upgrades. Both the increase and decrease of notes are significant. Only notes presented by Dominion do not have an important impact on the rates of return. The Fitch downgrades and upgrades in credit ratings influence the stock prices significantly. The strongest reaction was observed as a result of an upgrade. The financial market corrects the future changes of notes and as a result, the stock prices react significantly to these changes before and during the moment of publication.

Another reaction was observed in the case of notes given by Moody, JCR and R&I. The R&I downgrades do not influence significantly the rates of return on banks' shares. The mentioned variable rises by 2% after the announcement. On the other hand, upgrades proposed by Moody and JCR are not significant for stock prices. Also, the moment of the reaction of the stock market differs. Banks' stocks are lower during the pre-event window and post-event window by 2.3% and 2% respectively.

5. Conclusions

Credit ratings changes influence the financial market significantly. The basic goal of the paper was to analyse the impact of credit rating changes on the rates of return on banks' shares, considering the entity that asked for assigning a credit rating. The prepared analysis helped to carry out the objective. The presented hypotheses were verified. The investor-paid credit ratings are unpopular on the financial market. Only S&P provides enough credit rating changes to prepare the event study. These findings confirm that the rates of return on banks' shares are more sensitive to the investor-paid notes than the issuer notes. Such a situation can be connected with the ratings inflation and lower confidence in them than in notes paid by the issuers. Despite the fact that the market is more responsive to rating changes published on the behalf of the investor, issuers' notes also have a significant impact.

The presented results do not confirm unambiguously the hypothesis that the strongest impact of the banks' credit rating changes is observed for a downgrade, for both the issuer and investor credit ratings. The mentioned relationship depends on the particular credit rating agency. For example, stock market reacts strongly to upgrades presented by Fitch. Downgrades are significant for the ratings sample proposed by JCR, S&P and Moody. In the case of R&I, the logarithmic rates of return on banks' shares are sensitive to upgrades.

The presented results can suggest that investors prefer notes paid by themselves. They can also react strongly not only to the changes given by bigger CRAs. In most cases, stock prices react significantly after the publication of credit rating changes. The rates of return on banks' shares are adjusted before and during the moment of the announcement.

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